CLAIMS

We Claim:

1.   A network of peer-to-peer enterprise information systems

5   comprising:

a unified entity-relationship system comprising a plurality of entities, said

entities each comprising a plurality of attributes;

at least one subsumed entity-relationship system coupled to said unified

entity-relationship system, wherein said entities of said unified entity-

10   relationship system are mapped to one another and to entities and attributes of

entities of said subsumed entity-relationship system;

a join engine peer coupled to said unified entity-relationship system for

performing joins and splits to form related entities according to a join model;

and

15   a global object model coupled to said join engine peer, said global

object model comprising said mapped relationships and said join model

specifying transformations and queries required for forming an entity from a set

of related entities.

20   2.   The network of Claim 1 wherein said entities are mapped by

automatically importing schemas of databases for said entities into said global

object model and correlating relationships between related entities.

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3.   A network as described in Claim 2 wherein the attributes of an entity of said subsumed entity-relationship system are mapped to corresponding attributes of entities of said unified entity-relationship system.

5   4.   A network as described in Claim 2 wherein a subset of the attributes of an entity of said subsumed entity-relationship system are mapped to corresponding attributes of entities of said unified entity-relationship system.

5.   A network as described in Claim 2 wherein a single entity in said

10   unified entity-relationship system is mapped a plurality of times to a corresponding individual entity within a plurality of subsumed entity-relationship systems.

6.   A network as described in Claim 2 wherein a single entity within

15   said unified entity-relationship system is mapped to a plurality of entities within a single subsumed entity-relationship system, said unified entity-relationship system being mapped to a different set of attributes for each of said plurality of entities.

20   7.   A network as described in Claim 2 wherein said global object model is maintained in a versioned store.

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8.   A network as described in Claim 7 wherein join engines throughout said network maintain a copy of said object model obtained from said versioned store.

5   9.   A network as described in Claim 2 wherein said schemas are hierarchical.

10.   A network as described in Claim 9 wherein a schema is extended from a parent class entity to a child class entity based on user-defined parent-

10   child inheritance relationships.

11.   A network as described in Claim 10 wherein said child class entity inherits relationships from said parent class entity.

15   12.   A network as described in Claim 1 wherein related entities are marked for cascading deletes.

13.   A network as described in Claim 12 wherein a deletion of an entity results in the automatic deletion of related entities that are marked for cascading

20   deletes.

14.   A method of forming a global attribute object model in a network of connected enterprise information systems comprising:

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a)   mapping entities within a unified entity-relationship system to

entities within subsumed entity-relationship systems;

b)   specifying relationships between mapped entities to generate a

unified entity-relationship model; and

5   c)   using said global attribute object model in conjunction with a join

model for enforcing data consistency within said network.

15.   The method as described in Claim 14 wherein said entities are

mapped by importing schemas of databases for said entities into said global

10   attribute object model and correlating relationships between related entities.

16.   A method as described in Claim 15 wherein all of the attributes of

an entity of said subsumed entity-relationship system are mapped to

corresponding attributes of entities of said unified entity-relationship system.

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17.   A method as described in Claim 15 wherein a subset of the

attributes of an entity of said subsumed entity-relationship system are mapped

to corresponding attributes of entities of said unified entity-relationship system.

20   18.   A method as described in Claim 15 wherein a single entity in said

unified entity-relationship system is mapped a plurality of times to a

corresponding individual entity within a plurality of subsumed entity-relationship

systems.

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19. A method as described in Claim 15 wherein a single entity within said unified entity-relationship system is mapped to a plurality of entities within a single subsumed entity-relationship system, said unified entity-relationship system being mapped to a different set of attributes for each of said plurality of

5 entities.

20. The method as described in Claim 14 wherein said global attribute object model is maintained in a versioned store for allowing users to deploy a specific version compatible with their system configuration.

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21. A method as described in Claim 20 further comprising maintaining a copy of said global attribute object model within a plurality of join engine peers.

15 22. A method as described in Claim 15 wherein said schemas are hierarchical.

23. A method as described in Claim 22 wherein a schema is extended from a parent class entity to a child class entity based on user-defined parent-

20 child inheritance relationships.

24. A method as described in Claim 23 wherein said child class entity inherits relationships from said parent class entity.

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25.   A method as described in Claim 14 wherein related entities are marked for cascading deletes.

26.   A method as described in Claim 25 wherein a deletion of an entity

5   results in the automatic deletion of related entities that are marked for cascading deletes.

27.   A computer-usable medium having computer-readable program code embodied therein for causing a computer to perform a method of

10   communicating data within a network of peer-to-peer enterprise information systems, said method comprising:

a)   mapping entities within a unified entity-relationship system to entities within subsumed entity-relationship systems;

b)   implementing user-specified relationships between mapped

15   entities to generate a unified entity-relationship model; and

c)   using said global attribute object model in conjunction with a join model for enforcing data consistency within said network.

28.   The computer-usable medium as described in Claim 27 wherein

20   said entities are mapped by automatically importing schemas of databases for said entities into said global attribute object model and correlating relationships between related entities.

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29. A computer-usable medium as described in Claim 28 wherein the attributes of an entity of said subsumed entity-relationship system are mapped to corresponding attributes of entities of said unified entity-relationship system.

5   30. A computer-usable medium as described in Claim 28 wherein a subset of the attributes of an entity of said subsumed entity-relationship system are mapped to corresponding attributes of entities of said unified entity-relationship system.

10   31. A computer-usable medium as described in Claim 28 wherein a single entity in said unified entity-relationship system is mapped a plurality of times to a corresponding individual entity within a plurality of subsumed entity-relationship systems.

15   32. A computer-usable medium as described in Claim 28 wherein a single entity within said unified entity-relationship system is mapped to a plurality of entities within a single subsumed entity-relationship system, said unified entity-relationship system being mapped to a different set of attributes for each of said plurality of entities.

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33. A computer-usable medium as described in Claim 28 wherein said global attribute object model is maintained in a versioned store for allowing users to deploy a specific version compatible with their system configuration.

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34.   A computer-usable medium as described in Claim 33 further comprising maintaining a copy of said global attribute object model within a plurality of join engine peers.

5   35.   A computer-usable medium as described in Claim 28 wherein said schemas are hierarchical.

36.   A computer-usable medium as described in Claim 35 wherein a schema is extended from a parent class entity to a child class entity based on

10   user-defined parent-child inheritance relationships.

37.   A computer-usable medium as described in Claim 36 wherein said child class entity inherits relationships from said parent class entity.

15   38.   A computer-usable medium as described in Claim 27 wherein related entities are marked for cascading deletes.

39.   A computer-usable medium as described in Claim 38 wherein a deletion of an entity results in the automatic deletion of related entities that are

20   marked for cascading deletes.

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